



**MOBILE DEVICES BUSINESS**

**PRODUCT SAFETY AND COMPLIANCE  
EMC LABORATORY**

**EMC TEST REPORT**

**Test Report Number** – 22335-1 Supplement

**Report Date** – October 17, 2008

The test results contained herein relate only to the model(s) identified. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Engineer, I hereby declare that the equipment tested as specified in this report conforms to the requirements indicated.

Signature: 

Name: Thanigaiselvan Palaniswami

Title: EMC Engineer

Date: October 17, 2008

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THIS REPORT MUST NOT BE USED TO CLAIM PRODUCT ENDORSEMENT BY A2LA OR ANY AGENCY OF THE U.S. GOVERNMENT.

A2LA Certificate Number: 2518-02

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**Test Report Details**

Tests Performed By: Motorola Mobile Devices business (MDb)  
 Product Safety and Compliance Group  
 600 North US Hwy 45  
 Libertyville, IL 60048  
 PH (847) 523-6167 Fax (847) 523-4538  
 Motorola MDb FRN: 0004321311  
 FCC Registration Number: 316588  
 Industry Canada Number: IC1090-1

Tests Requested By: Motorola Inc.  
 Mobile Devices business  
 600 North US Hwy 45  
 Libertyville, IL 60048

Product Type: Cellular Phone

Signaling Capability: GSM 850 & 1900, EDGE 850 & 1900, Bluetooth

FCC ID: IHDP56JC1

Serial Numbers: 004401028263537, 004401028264170,  
 004401028264394

Testing Complete Date: October 17, 2008

**Applicable Standards**

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47:

  X   Part 15 Subpart B – Unintentional Radiators

Applicable Standards: ANSI 63.4 2003

**Summary of Testing**

Test #	Test Name	Pass/Fail
1	Field Strength of Spurious Emissions from Unintentional Radiators	Pass
2	AC Line Conducted Emissions	Pass

Test #	Test Name	Margin with respect to the Limit
1	Field Strength of Spurious Emissions from Unintentional Radiators	see results
2	AC Line Conducted Emissions	see results

The margin with respect to the limit is the minimum margin for all modes and bands.

**General and Special Conditions**

The EUT was tested using a fully charged battery.  
 All testing was done in an indoor controlled environment with an average temperature of 22° C and relative humidity of 50%.

**Equipment List**

Manufacturer	Equipment Type	Model No.	Serial Number	Calibration Due Date
Rohde Schwarz	Receiver	ESI26	838786/010	2/28/09
Rohde Schwarz	Receiver	ESI26	100001	6/03/09
A.H. Systems	DRG Horn Antenna	SAS 200/571	265	1/18/09
ETS	Log-Periodic Antenna	3148	1189	10/10/08
ETS	Biconical Antenna	3110B	3369	10/04/08
ETS	Log-Periodic Antenna	3148	1188	07/30/09
ETS	Biconical Antenna	3110B	3370	07/29/09
Attenuator	Weinschel	AS-6	6675	6/13/09
Attenuator	Weinschel	AS-6	6677	6/17/09
Agilent	Microwave Preamplifier	8449B	3008A01442	2/25/09
ETS	LISN	3810/2NM	2179	1/23/09
ETS	LISN	3810/2NM	00023630	1/23/09
Dell	Laptop Computer	M20	NA	NA
Iomega	Zip Drive	Z250S	P9HM1992CK	NA
Olympus	Camera	D-600L	4020727	NA

All equipment is on a one-year calibration cycle.

All test equipment was within their calibration date during the time of testing. When equipment went out of calibration during testing it was replaced using a similar piece of calibrated equipment. All these equipments are listed in the equipment list.

The Dell M20 Laptop Computer, Iomega Z250S Zip Drive and the Olympus D-600L Camera are labeled as DoC.

## **Measurement Procedures and Data**

### **FIELD STRENGTH OF EMISSIONS FROM UNINTENTIONAL RADIATORS**

#### **Measurement Procedure**

The equipment under test is placed inside the semi-anechoic chamber on a wooden table on the turntable center. For each radiated emission, the antenna mast is raised and lowered from 1 to 4 meters and the turntable is rotated 360 degrees to obtain a maximum peak reading on the spectrum analyzer. The final radiated emissions are then measured using an EMI receiver employing a CISPR quasi-peak detector function below 1000 MHz and an average detector function above 1000 MHz. This is repeated for both horizontal and vertical polarizations of the receive antenna.

The field strength of each radiated emission is calculated by correcting the EMI receiver level for cable loss, amplifier gain, and antenna correction factors.

$$\text{Field Strength (dBuV/m)} = \text{EMI Receiver Level (dBuV)} + \text{Cable Loss (dB)} - \text{Amplifier Gain (dB)} + \text{Antenna Correction Factor (1/m)}$$

#### **Test Setup**

The EUT and the host equipment were setup according to the procedures in ANSI C63.4-2003. The EUT was connected to a laptop computer using a USB data cable. The USB data cable is 1 m in length. The parallel and the serial ports of the computer were populated. The EUT was communicating with the laptop computer continuously.

**Measurement Results**

Operating Mode – Rx Mode, Data Transfer Mode.

Notes: Worst Case emissions reported.

**30 MHz – 1000 MHz**

Frequency MHz	Level dBuV/m	Measured dBuV	Transd dB	Cables dB	Limit dBuV/m	Margin dB	Height cm	Angle deg	Pol.
144.24	36.86	14.33	13	9.5	43.5	6.6	100	164	VERT
150.92	36.61	13.78	13.2	9.6	43.5	6.9	114	191	VERT
320.64	44.65	18.35	15.1	11.2	46	1.4	100	256	HORI
878.92	36.68	-1.01	23.3	14.4	46	9.3	100	124	HORI
931.12	37.45	-1.11	23.9	14.7	46	8.5	150	10	HORI

**Above 1 GHz**

Frequency MHz	Level dBuV/m	Measured dBuV	Transd dB	Gain dB	Limit dBuV/m	Margin dB	Height cm	Angle deg	Pol.
1063.9	38.06	31.65	23.6	17.2	54	15.9	173	323	VERT
1064.1	37.31	30.9	23.6	17.2	54	16.7	150	326	VERT
1118.2	42.55	35.9	23.9	17.3	54	11.4	379	342	VERT
1118.3	42.58	35.92	23.9	17.3	54	11.4	366	344	VERT
1118.4	42.01	35.35	23.9	17.3	54	12	385	0	VERT
1122.4	43.39	36.7	24	17.3	54	10.6	380	346	VERT
1126.4	43.67	36.94	24	17.3	54	10.3	213	332	VERT
1126.8	44.46	37.73	24	17.3	54	9.5	365	337	VERT
1126.9	44.01	37.27	24	17.3	54	10	366	342	VERT
1130	42.42	35.65	24	17.2	54	11.6	213	332	VERT
1490.6	37.45	29.58	24.8	16.9	54	16.5	178	177	HORI
1500.1	37.8	30.11	24.6	16.9	54	16.2	114	269	VERT
1508.8	36.96	29.23	24.6	16.9	54	17	357	205	VERT
1512.5	37.61	29.85	24.6	16.9	54	16.4	100	270	VERT

**Peak Radiated Data for Emissions above 1GHz**

Frequency MHz	Level dBuV/m	Angle deg	Height cm	Pol.
1062.12	53.53	327	200	VER
1064.12	52.6	53	100	VER
1118.23	55.79	348	400	VER
1122.24	55.92	346	400	VER
1126.25	55.56	346	400	VER
1130.26	56.25	337	200	VER
1490.98	54.24	174	200	HOR
1501.00	56.48	278	100	VER
1507.01	54.01	193	400	VER
1490.98	54.13	22	400	VER
1513.02	55.78	269	100	VER

## **AC LINE CONDUCTED EMISSIONS**

### **Measurement Procedure**

Measured levels of ac power line conducted emission shall be the radio-noise voltage from the line probe or across the 50  $\Omega$  LISN port, where permitted, terminated into a 50  $\Omega$  noise meter, or where permitted or required, the radio-noise current on the power line sensed by a current probe.

All radio-noise voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord or calibrated extension cord by the use of mating plugs and receptacles on the EUT and LISN. Equipment shall be tested with power cords that are normally supplied using an LISN, the 50  $\Omega$  measuring port is terminated by a 50  $\Omega$  radio-noise meter or a 50  $\Omega$  resistive load. All other ports are terminated in 50  $\Omega$ .

Detectors - Quasi Peak and Average Detector

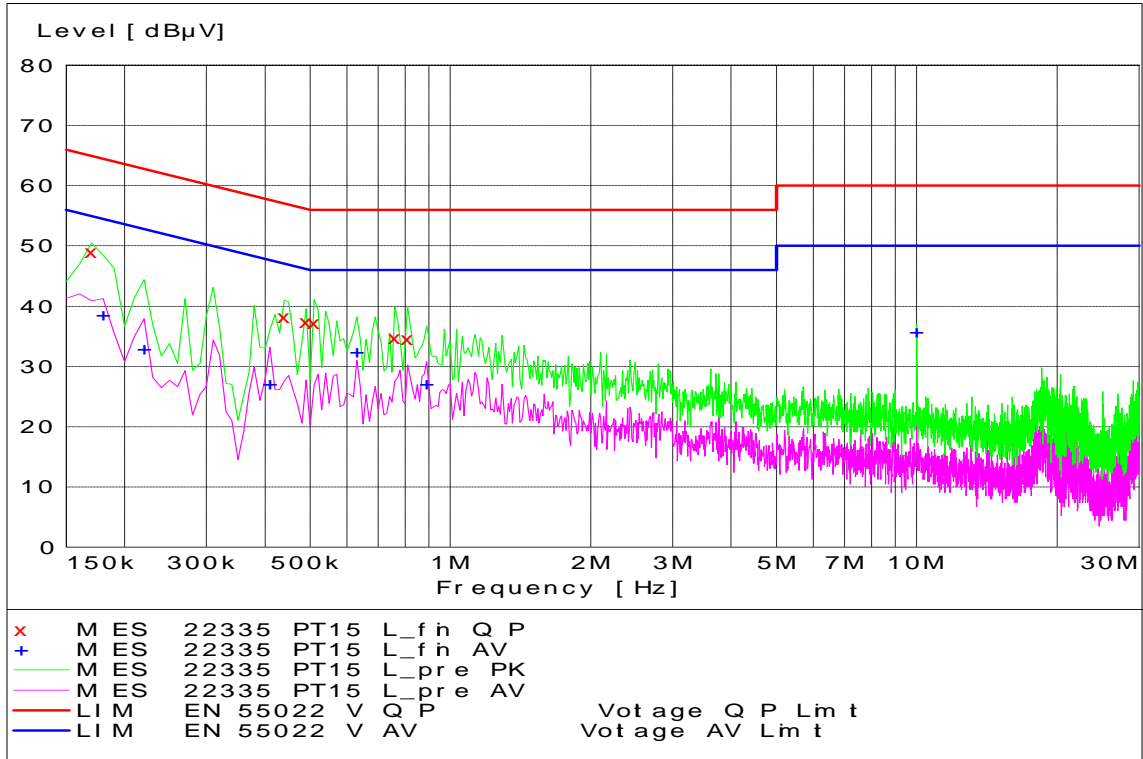
### **Test Setup**

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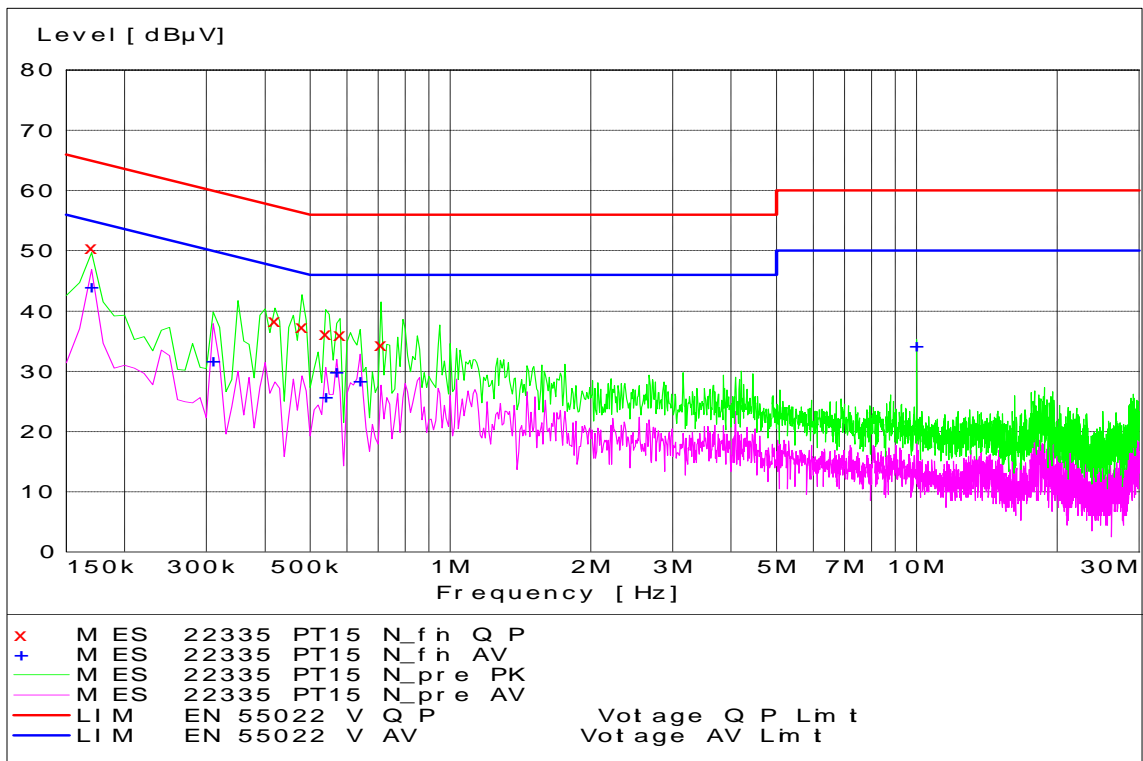
### **Measurement Results**

See attached:

**AC LINE COMPUTER PERIPHERAL - Tx Mode - Line Coupling**



**AC LINE COMPUTER PERIPHERAL - Tx Mode - Neutral Coupling**



**End of Test Report**